

## Summary Stage II

During Stage II, the experimental chaotic device was made and developed using the existing and purchased equipment's and materials. Control measurements by current (IC) and electro-optics (EO) modulations were performed, both for a single ECSL system and coupled systems, in reversible transmitter-receiver (master-slave / MS) configurations. The measurements made at different values of modulation frequencies and amplitudes have highlighted the possibility of controlling chaotic dynamics through these techniques. Also, in the case of the MS coupling, the encrypted transmission and the decryption of a transmitted message in the form of pulsed modulation 10 (rectangular signal) were performed using chaos masking technique scheme. These results were correlated with the numerical ones obtained using an appropriate programming environment, as well as simulation models and calculation routines developed within the project and dedicated to the developed experimental device.

From the point of view of the automatic control software of the experimental device, a first version has been developed that allows the control of the subassemblies of the device (the equipment's with automatic control interface) that are part of the control modules of laser emission, feedback intensities, coupling between cavities, and the modulation.